

WHAT IS CLAIMED IS:

1. A column for purifying harmful gases containing powdered material, having a gas inlet, a bed of a purifying agent and a gas outlet for letting out purified gases, wherein the column has a horizontal plate fitted at a position above the bed of a purifying agent and below the gas inlet in the column so as to allow an outer edge of the horizontal plate to make intimate contact with the inner wall surface of the column; an upstanding pipe passing through the center of the horizontal plate for guiding harmful gases from the gas inlet to below the horizontal plate; and a collector for the powdered material defined by an annular space formed with inner wall surface of the column, upper surface of the horizontal plate and outer wall surface of the pipe.

2. A column for purifying harmful gases containing powdered material, having a gas inlet, a bed of a purifying agent and a gas outlet for letting out purified gases, wherein the column has a horizontal plate fitted at a position above the bed of a purifying agent and below the gas inlet in the column so as to allow an outer edge of the horizontal plate to make intimate contact with the inner wall surface of the column; a plurality of upstanding pipes each passing through the horizontal plate for guiding harmful gases from the gas inlet to below the horizontal plate; and a collector for the powdered material defined a space formed with inner wall surface of the column, upper surface of the horizontal plate and outer wall surfaces of the pipes.

3. The column according to claim 1 or 2, which has an empty space between the horizontal plate and the bed of the purifying agent.

4. The column according to claim 1 or 2, further include a baffle located between the horizontal plate and the bed of a purifying agent and having holes for regulating the flow of the harmful gases.

5. The column according to claim 1 or 2, wherein the pipe has a top opening located at a higher level than the gas inlet.

6. The column according to claim 1 or 2, wherein lower extremity of the gas inlet and upper surface of the horizontal plate have therebetween a distance which is 0.02 to 1.5 times as large as the inside diameter of the column.

7. The column according to claim 1 or 2, wherein lower surface of the horizontal plate and upper extremity of the bed of purifying agent have a distance of 1 to 20 cm therebetween.

8. A method of purifying harmful gases containing powdered material in a column having a gas inlet, a bed of a purifying agent and a gas outlet for letting out purified gases, wherein the harmful gases are guided into a collector for powdered material defined by an annular space formed with inner wall surface of the column, upper surface of a horizontal plate fitted at a position above the bed of purifying agent and below the gas inlet in the column and having an outer edge making intimate contact with inner wall surface of the column, and outer wall surface of an upstanding pipe passing through the center of the horizontal plate for guiding harmful gases from the gas inlet to below the horizontal plate, so that a part of the powdered material contained in harmful gases falls into the collector, thereafter the gases are brought into contact with the purifying agent to be purified.

9. A method of purifying harmful gases containing powdered material

in a column having a gas inlet, a bed of a purifying agent and a gas outlet for letting out purified gases, wherein the harmful gases are guided into a collector for powdered material defined by a space formed with inner wall surface of the column, upper surface of a horizontal plate fitted at a position above the bed of purifying agent and below the gas inlet in the column and having an outer edge making intimate contact with inner wall surface of the column, and outer wall surface of a plurality of upstanding pipes each passing through the horizontal plate for guiding harmful gases from the gas inlet to below the horizontal plate, so that a part of the powdered material contained in harmful gases falls into the collector, thereafter the gases are brought into contact with the purifying agent to be purified.